

COA

Chapter 08: | OS Support – Segmentation

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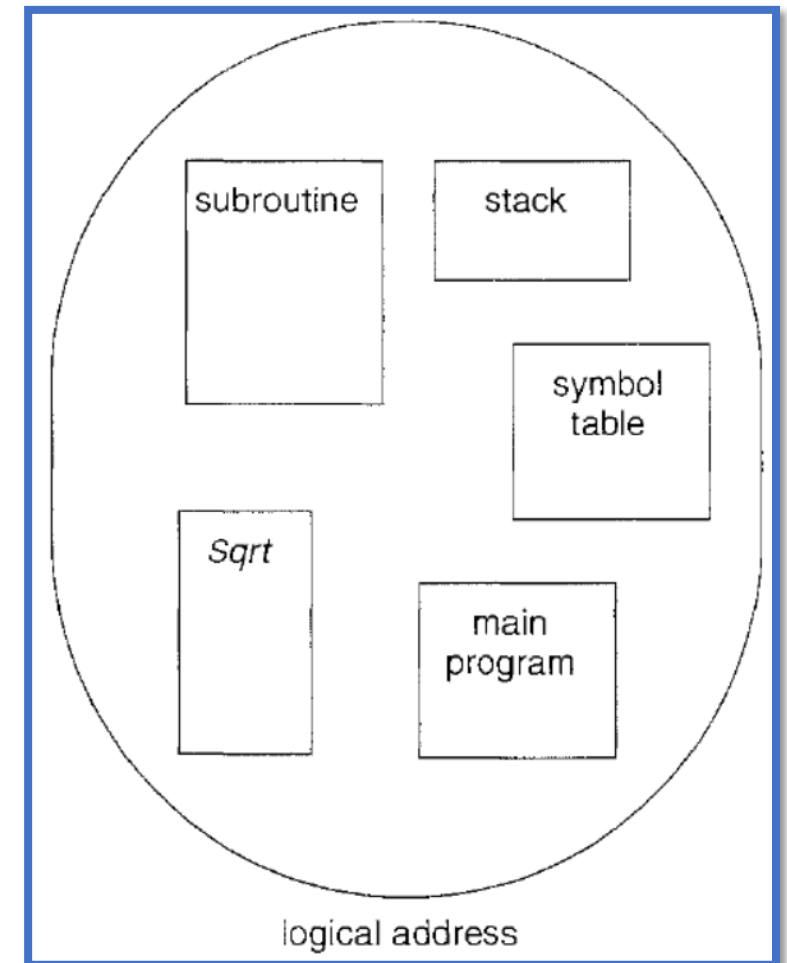
<https://youtube.com/drmelhosseini>

| AGENDA

- Segmentation

| Segmentation

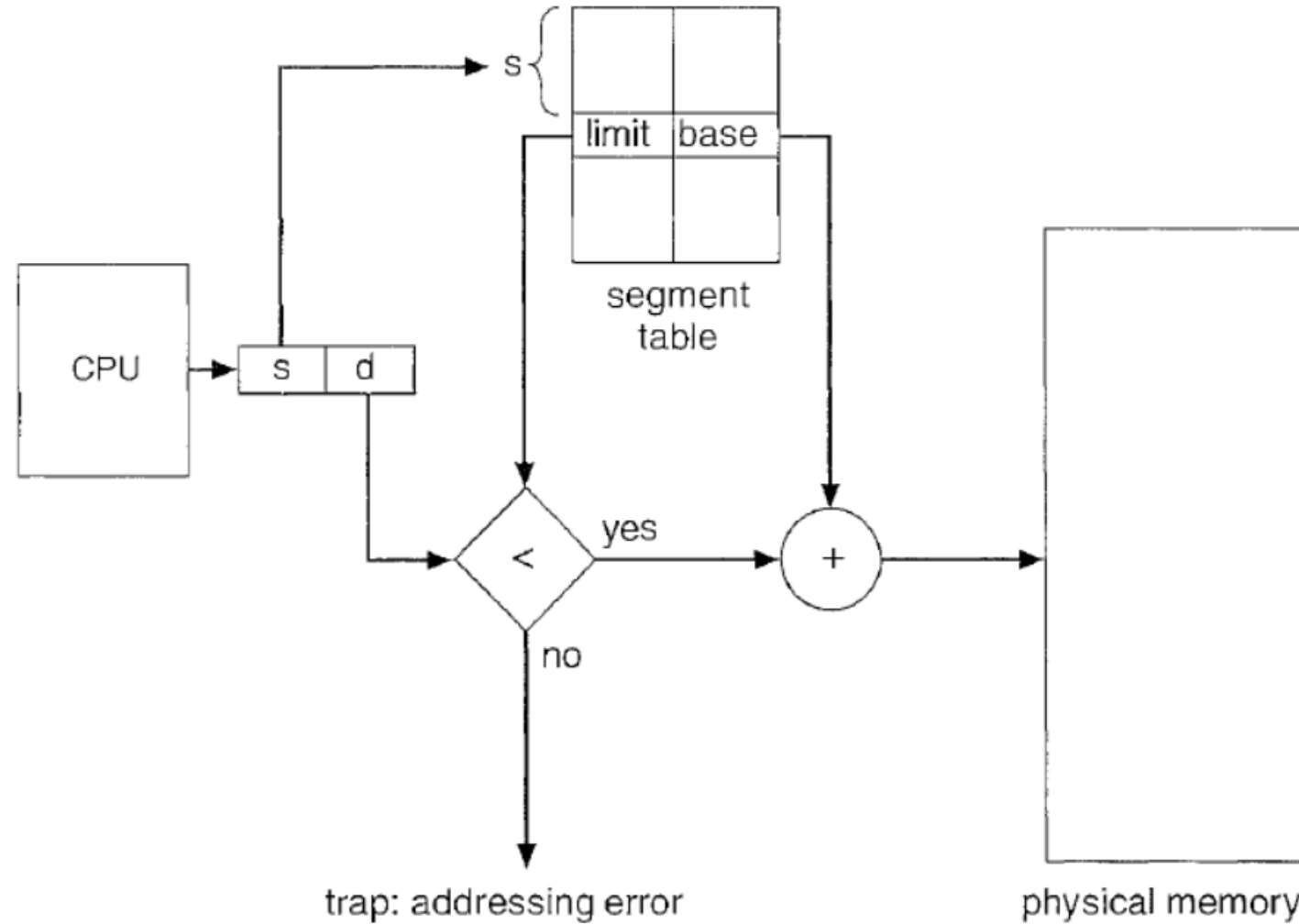
- **Paging** is **invisible** to the programmer
- **Segmentation** is usually **visible** to the programmer
- **Segmentation** allows the programmer to view memory as consisting of **multiple** address spaces or **segments**.
- Users **prefer to view** memory as a collection of **variable-sized segments**, with no necessary ordering among segments



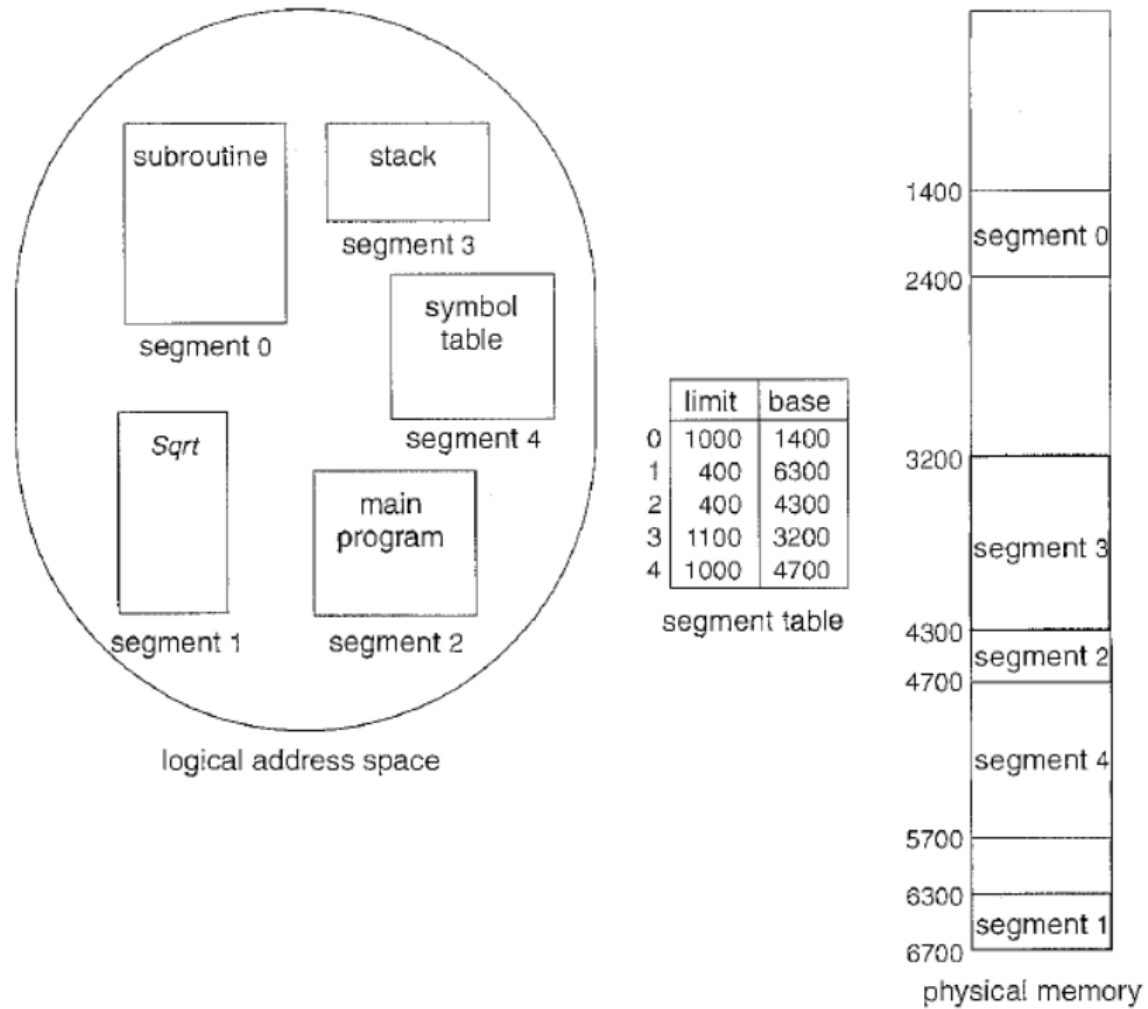
| Segmentation

- Segments are of **variable, indeed dynamic, size.**
- There may be a **number of program segments** for various types of programs as well as a number of data segments
- Memory **references** consist of a (**segment number, offset**)
- **Contrast to the paging**, in which the **user specifies only a single address**, which is **partitioned by the hardware** into a page number and an offset, all **invisible to the programmer.**)

| Segmentation



| Segmentation



| Advantages of Segmentation

- Simplifies handling of growing data structures
- Allows programs to be altered and recompiled independently, without re-linking and re-loading
- Lends itself to sharing among processes
- Lends itself to protection
- Some systems combine segmentation with paging